Invoice

Moffatt & Nichol
P.O. Box 22648
Long Beach, CA 90801-5648
Phone: (562) 590-6500

Robert Law
De Maximis Inc.
186 Center Street, Suite 290
Clinton, NJ 08809

April 27, 2012
Invoice No: 60545

Project 6664 Lower Passaic River Restoration Modeling Work - Initial Tasks

Professional Services from February 26, 2012 to March 31, 2012

Phase 4 LPR/NB RI/FS Modeling Program TOM4

Task 08 Developing LPR/NB Modeling TOM3 SOW, Schedule and Budget

Professional Personnel

	Hours	Rate	Amount	
Engineer/Scientist III				
Canizares, Rafael	8.00	185.00	1,480.00	
Engineer/Scientist II				
Mathew, Rooni	2.00	164.00	328.00	
Totals	10.00		1,808.00	
Total Labor				**1,808.00**
			Total this Task	**$1,808.00**
			Total this Phase	**$1,808.00**

Additional Tasks

Task 12 HD Model RM109

Professional Personnel

	Hours	Rate	Amount	
Engineer/Scientist III				
Canizares, Rafael	8.00	185.00	1,480.00	
Support Staff Engineer				
Manian, Dinesh	30.00	90.00	2,700.00	
Totals	38.00		4,180.00	
Total Labor				**4,180.00**
			Total this Task	**$4,180.00**
			Total Additional Tasks	**$4,180.00**

Phase 5 LPR/NB RI/FS Modeling Program TOM5

Task 01 Project Management

Professional Personnel

	Hours	Rate	Amount	
Engineer/Scientist III				
Canizares, Rafael	64.00	185.00	11,840.00	
Totals	64.00		11,840.00	
Total Labor				**11,840.00**
			Total this Task	**$11,840.00**

Task 02 Data Analysis & Monitoring Design Coordination for Use In Numberical Model

Professional Personnel

	Hours	Rate	Amount
Engineer/Scientist III			
Canizares, Rafael	24.00	185.00	4,440.00
Engineer/Scientist II			
Mathew, Rooni	10.50	164.00	1,722.00
Staff Engineer/Scientist			

Xiong, Yi	80.00	114.00	9,120.00		
Support Staff Engineer					
Manian, Dinesh	10.00	90.00	900.00		
Totals	124.50		16,182.00		
Total Labor					**16,182.00**
			Total this Task		**$16,182.00**

Task 03 System Understanding

Professional Personnel

	Hours	**Rate**	**Amount**	
Engineer/Scientist III				
Canizares, Rafael	26.50	185.00	4,902.50	
Engineer/Scientist II				
Mathew, Rooni	12.00	164.00	1,968.00	
Support Staff Engineer				
Manian, Dinesh	102.00	90.00	9,180.00	
Totals	140.50		16,050.50	
Total Labor				**16,050.50**
			Total this Task	**$16,050.50**

Task 04 LPR/NB Hydrodynamic Modeling

Professional Personnel

	Hours	**Rate**	**Amount**	
Engineer/Scientist III				
Canizares, Rafael	12.50	185.00	2,312.50	
Totals	12.50		2,312.50	
Total Labor				**2,312.50**
			Total this Task	**$2,312.50**

Task 05 LPR/NB Sediment Transport Modeling

Professional Personnel

	Hours	**Rate**	**Amount**	
Engineer/Scientist III				
Canizares, Rafael	3.50	185.00	647.50	
Engineer/Scientist II				
Mathew, Rooni	85.00	164.00	13,940.00	
Support Staff Engineer				
Manian, Dinesh	56.00	90.00	5,040.00	
Totals	144.50		19,627.50	
Total Labor				**19,627.50**
			Total this Task	**$19,627.50**

Task 07 LPR/NB Contaiminant Fate and Transport Modeling

Professional Personnel

	Hours	**Rate**	**Amount**	
Engineer/Scientist III				
Canizares, Rafael	15.00	185.00	2,775.00	
Engineer/Scientist II				
Mathew, Rooni	60.50	164.00	9,922.00	
Totals	75.50		12,697.00	
Total Labor				**12,697.00**
			Total this Task	**$12,697.00**

Task 10 Computer Support

Professional Personnel

	Hours	**Rate**	**Amount**	
Engineer/Scientist II				
Mathew, Rooni	6.00	164.00	984.00	
Totals	6.00		984.00	
Total Labor				**984.00**
			Total this Task	**$984.00**
			Total this Phase	**$79,693.50**

TOTAL THIS INVOICE	**$85,681.50**

Please remit payment of this invoice to:

Moffatt & Nichol
ABA #121000248
Account #4159349729
Swift #WFBIUS6WFFX
Wells Fargo Bank
111 W. Ocean Blvd., Suite 300
Long Beach, CA 90802 USA

Project	6664	Lower Passaic River Restoration	Invoice	60545

Billing Backup

Moffatt & Nichol

Invoice 60545 Dated 4/27/2012

Project 6664 Lower Passaic River Restoration Modeling Work - Initial Tasks

Phase 4 LPR/NB RI/FS Modeling Program TOM4

Task 08 Developing LPR/NB Modeling TOM3 SOW, Schedule and Budget

Professional Personnel

			Hours	Rate	Amount	
Engineer/Scientist III						
1548	Canizares, Rafael	3/3/2012	8.00	185.00	1,480.00	
Engineer/Scientist II						
2219	Mathew, Rooni	3/3/2012	2.00	164.00	328.00	
Totals			10.00		1,808.00	
Total Labor						**1,808.00**
				Total this Task		**$1,808.00**
				Total this Phase		**$1,808.00**

Additional Tasks

Task 01 HD Model RM109

Professional Personnel

			Hours	Rate	Amount	
Engineer/Scientist III						
1548	Canizares, Rafael	3/3/2012	8.00	185.00	1,480.00	
Support Staff Engineer						
2301	Manian, Dinesh	3/3/2012	22.00	90.00	1,980.00	
2301	Manian, Dinesh	3/10/2012	8.00	90.00	720.00	
Totals			38.00		4,180.00	
Total Labor						**4,180.00**
				Total this Task		**$4,180.00**
				Total Additional Tasks		**$4,180.00**

Phase 5 LPR/NB RI/FS Modeling Program TOM5

Task 01 Project Management

Professional Personnel

			Hours	Rate	Amount	
Engineer/Scientist III						
1548	Canizares, Rafael	3/3/2012	8.00	185.00	1,480.00	
1548	Canizares, Rafael	3/10/2012	8.00	185.00	1,480.00	
1548	Canizares, Rafael	3/10/2012	1.50	185.00	277.50	
1548	Canizares, Rafael	3/10/2012	1.50	185.00	277.50	
1548	Canizares, Rafael	3/10/2012	5.00	185.00	925.00	
1548	Canizares, Rafael	3/17/2012	9.00	185.00	1,665.00	
1548	Canizares, Rafael	3/24/2012	4.00	185.00	740.00	
1548	Canizares, Rafael	3/24/2012	8.00	185.00	1,480.00	
1548	Canizares, Rafael	3/24/2012	4.00	185.00	740.00	
1548	Canizares, Rafael	3/24/2012	4.00	185.00	740.00	
1548	Canizares, Rafael	3/31/2012	11.00	185.00	2,035.00	
Totals			64.00		11,840.00	
Total Labor						**11,840.00**
				Total this Task		**$11,840.00**

Task 02 Data Analysis & Monitoring Design Coordination for Use In Numberical Model

Professional Personnel

			Hours	Rate	Amount	
Engineer/Scientist III						
1548	Canizares, Rafael	3/3/2012	8.00	185.00	1,480.00	
1548	Canizares, Rafael	3/10/2012	8.00	185.00	1,480.00	
1548	Canizares, Rafael	3/31/2012	2.00	185.00	370.00	
1548	Canizares, Rafael	3/31/2012	6.00	185.00	1,110.00	
Engineer/Scientist II						
2219	Mathew, Rooni	3/3/2012	3.00	164.00	492.00	
2219	Mathew, Rooni	3/3/2012	1.00	164.00	164.00	
2219	Mathew, Rooni	3/3/2012	2.00	164.00	328.00	
2219	Mathew, Rooni	3/10/2012	3.00	164.00	492.00	
2219	Mathew, Rooni	3/31/2012	1.50	164.00	246.00	
Staff Engineer/Scientist						
2403	Xiong, Yi	3/24/2012	16.00	114.00	1,824.00	
2403	Xiong, Yi	3/24/2012	8.00	114.00	912.00	
2403	Xiong, Yi	3/24/2012	8.00	114.00	912.00	
2403	Xiong, Yi	3/24/2012	8.00	114.00	912.00	
2403	Xiong, Yi	3/31/2012	8.00	114.00	912.00	
2403	Xiong, Yi	3/31/2012	8.00	114.00	912.00	
2403	Xiong, Yi	3/31/2012	8.00	114.00	912.00	
2403	Xiong, Yi	3/31/2012	8.00	114.00	912.00	
2403	Xiong, Yi	3/31/2012	8.00	114.00	912.00	
Support Staff Engineer						
2301	Manian, Dinesh	3/3/2012	10.00	90.00	900.00	
Totals			124.50		16,182.00	
Total Labor						**16,182.00**
					Total this Task	**$16,182.00**

Task 03 System Understanding

Professional Personnel

			Hours	Rate	Amount	
Engineer/Scientist III						
1548	Canizares, Rafael	3/10/2012	1.00	185.00	185.00	
1548	Canizares, Rafael	3/10/2012	3.50	185.00	647.50	
1548	Canizares, Rafael	3/17/2012	16.00	185.00	2,960.00	
1548	Canizares, Rafael	3/24/2012	4.00	185.00	740.00	
1548	Canizares, Rafael	3/31/2012	2.00	185.00	370.00	
Engineer/Scientist II						
2219	Mathew, Rooni	3/3/2012	10.00	164.00	1,640.00	
2219	Mathew, Rooni	3/24/2012	1.00	164.00	164.00	
2219	Mathew, Rooni	3/24/2012	1.00	164.00	164.00	
Support Staff Engineer						
2301	Manian, Dinesh	3/3/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/10/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/10/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/10/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/17/2012	16.00	90.00	1,440.00	
2301	Manian, Dinesh	3/24/2012	6.00	90.00	540.00	
2301	Manian, Dinesh	3/24/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/24/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/31/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/31/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/31/2012	16.00	90.00	1,440.00	
Totals			140.50		16,050.50	
Total Labor						**16,050.50**
					Total this Task	**$16,050.50**

Task 04 LPR/NB Hydrodynamic Modeling

Professional Personnel

			Hours	Rate	Amount
Engineer/Scientist III					
1548	Canizares, Rafael	3/10/2012	2.50	185.00	462.50
1548	Canizares, Rafael	3/24/2012	2.00	185.00	370.00
1548	Canizares, Rafael	3/24/2012	8.00	185.00	1,480.00
Totals			12.50		2,312.50

Total Labor						**2,312.50**
					Total this Task	**$2,312.50**

Task 05 LPR/NB Sediment Transport Modeling

Professional Personnel

			Hours	Rate	Amount	
Engineer/Scientist III						
1548	Canizares, Rafael	3/10/2012	2.50	185.00	462.50	
1548	Canizares, Rafael	3/31/2012	1.00	185.00	185.00	
Engineer/Scientist II						
2219	Mathew, Rooni	3/3/2012	1.00	164.00	164.00	
2219	Mathew, Rooni	3/3/2012	4.00	164.00	656.00	
2219	Mathew, Rooni	3/3/2012	8.00	164.00	1,312.00	
2219	Mathew, Rooni	3/10/2012	7.00	164.00	1,148.00	
2219	Mathew, Rooni	3/10/2012	3.00	164.00	492.00	
2219	Mathew, Rooni	3/10/2012	.50	164.00	82.00	
2219	Mathew, Rooni	3/10/2012	1.00	164.00	164.00	
2219	Mathew, Rooni	3/17/2012	6.00	164.00	984.00	
2219	Mathew, Rooni	3/17/2012	3.00	164.00	492.00	
2219	Mathew, Rooni	3/17/2012	4.00	164.00	656.00	
2219	Mathew, Rooni	3/17/2012	3.00	164.00	492.00	
2219	Mathew, Rooni	3/17/2012	5.00	164.00	820.00	
2219	Mathew, Rooni	3/24/2012	4.00	164.00	656.00	
2219	Mathew, Rooni	3/24/2012	4.00	164.00	656.00	
2219	Mathew, Rooni	3/24/2012	7.00	164.00	1,148.00	
2219	Mathew, Rooni	3/24/2012	4.00	164.00	656.00	
2219	Mathew, Rooni	3/31/2012	8.00	164.00	1,312.00	
2219	Mathew, Rooni	3/31/2012	5.00	164.00	820.00	
2219	Mathew, Rooni	3/31/2012	7.50	164.00	1,230.00	
Support Staff Engineer						
2301	Manian, Dinesh	3/10/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/17/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/17/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/17/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/24/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/24/2012	8.00	90.00	720.00	
2301	Manian, Dinesh	3/31/2012	8.00	90.00	720.00	
Totals			144.50		19,627.50	
Total Labor						**19,627.50**
					Total this Task	**$19,627.50**

Task 07 LPR/NB Contaiminant Fate and Transport Modeling

Professional Personnel

			Hours	Rate	Amount
Engineer/Scientist III					
1548	Canizares, Rafael	3/17/2012	8.00	185.00	1,480.00
1548	Canizares, Rafael	3/24/2012	2.00	185.00	370.00
1548	Canizares, Rafael	3/24/2012	4.00	185.00	740.00
1548	Canizares, Rafael	3/31/2012	1.00	185.00	185.00
Engineer/Scientist II					
2219	Mathew, Rooni	3/3/2012	1.00	164.00	164.00
2219	Mathew, Rooni	3/3/2012	4.00	164.00	656.00
2219	Mathew, Rooni	3/3/2012	1.00	164.00	164.00
2219	Mathew, Rooni	3/10/2012	1.00	164.00	164.00
2219	Mathew, Rooni	3/10/2012	7.50	164.00	1,230.00
2219	Mathew, Rooni	3/10/2012	5.00	164.00	820.00
2219	Mathew, Rooni	3/10/2012	4.00	164.00	656.00
2219	Mathew, Rooni	3/17/2012	2.00	164.00	328.00
2219	Mathew, Rooni	3/17/2012	8.00	164.00	1,312.00
2219	Mathew, Rooni	3/17/2012	4.00	164.00	656.00
2219	Mathew, Rooni	3/17/2012	2.00	164.00	328.00
2219	Mathew, Rooni	3/24/2012	4.00	164.00	656.00
2219	Mathew, Rooni	3/24/2012	4.00	164.00	656.00
2219	Mathew, Rooni	3/24/2012	7.00	164.00	1,148.00
2219	Mathew, Rooni	3/24/2012	4.00	164.00	656.00

2219	Mathew, Rooni	3/31/2012	2.00	164.00	328.00	
Totals			75.50		12,697.00	
Total Labor						**12,697.00**
					Total this Task	**$12,697.00**

Task 10 Computer Support

Professional Personnel

			Hours	**Rate**	**Amount**	
Engineer/Scientist II						
2219	Mathew, Rooni	3/3/2012	3.00	164.00	492.00	
2219	Mathew, Rooni	3/17/2012	1.00	164.00	164.00	
2219	Mathew, Rooni	3/17/2012	1.00	164.00	164.00	
2219	Mathew, Rooni	3/17/2012	1.00	164.00	164.00	
Totals			6.00		984.00	
Total Labor						**984.00**
					Total this Task	**$984.00**
					Total this Phase	**$79,693.50**
					Total this Project	**$85,681.50**
					Total this Report	**$85,681.50**

MOFFATT & NICHOL

104 West 40th Street
14th floor
New York, NY 10018

(212) 768-7454
Fax (212) 768-7936

Detailed Description of work done by M&N personnel associated to the LPR/NB Modeling Program Task Order Memoranda 4 - Scope of Work for the period 02/26/2012 to 03/31/2012 M&N Project No. 6664

Hydrodynamics Principal Investigator - Rafael Cañizares.

Task 8 – Developing LPR/NB Modeling TOM SOW, Schedule and Budget	Review TOM5 SOW and Budget Prepare final TOM5 SOW and Budget

Rooni Mathew

Task 8 – Developing LPR/NB Modeling TOM SOW, Schedule and Budget	Review TOM5 SOW and Budget

Detailed Description of work done by M&N personnel associated to the Additional Tasks of the LPR/NB Modeling Program A for the period 02/26/2012 to 03/31/2012 M&N Project No. 6664

Hydrodynamics Principal Investigator - Rafael Cañizares.

Task 12 – HD modeling of RM 10.9	Review development of historical bathymetries Prepare ArcGIS files from digitized depths and charts Prepare difference maps (1932-2011)

Dinesh Manian

Task 12 – HD modeling of RM 10.9	Analysis of historical bathymetry at RM 10.9 Development of surfaces, cross sectional plots and prepare figures with historical profiles

Detailed Description of work done by M&N personnel associated to the LPR/NB Modeling Program Task Order Memoranda 5 - Scope of Work for the period 02/26/2012 to 03/31/2012 M&N Project No. 6664

Hydrodynamics Principal Investigator - Rafael Cañizares.

Task 1 – Project Management	Internal coordination with Deltares and M&N Calls and Coordination with Project Coordinator including prepare material such as Dash Board reports. Prepare and review invoices Modeling update call, coordination and attendance Attend TC meeting and prepare modeling update presentation Collaboration meeting with EPA, preparation and attendance
Task 2 – Data Analysis & Monitoring Design Coordination for Use in Numerical Model	Historical Bathymetric data review, QA/QC. Remediation module development. Discussion with CH2mhill. Prepare information to generate the remediation module files.
Task 3 – System Understanding	Review of inputs for remediation module Review NB data, NB System Understanding NB System understanding discussion with Han Winterwerp Coordination with Han Winterwerp, Bathymetry analysis
Task 4 – LPR/NB Hydrodynamic Model	Internal coordination and discussion, wave model MSC meeting Preparation and attendance
Task 5 – LPR/NB Sediment Transport Modeling	Discussion with Han Winterwerp on sediment transport modeling and next tasks Internal coordination
Task 7 – LPR/NB Contaminant Fate and Transport Modeling	Coordination and discussions with Leo Postma and Rooni Mathew Review of Remediation module Prepare presentation of remedial module

Rooni Mathew.

Task 2 – Data Analysis	Debug wetting and drying code for travel time runs, review model results Review Spring and Fall PWCM salinity data at RM 10.2 Sediment grain size distribution (GSD) data extraction and send to EPA for mutual review for convergence Review CARP and LPR MWP documents for Hg partitioning/speciation, and summarize travel time analysis for Kristen Durocher Review QAPP and develop Tidal 1 & 2 locations for CWCM

	Event 3
Task 3 – System Understanding	Develop COPC core profile plots for LPR and NB Review NB source tracking runs Review NB wave analysis
Task 5 – LPR/NB Sediment Transport Modeling	Call with HQI to discuss remediation codes, collaboration follow-up, ST model inputs convergence Debug wetting and drying in *advsed.for* for external mode hydro, redo benchmark runs, develop inputs for Hurricane Irene Develop inputs for Hurricane Irene, review post-dredge infill runs Develop RI/FS work summary for MSC call, model-data comparisons for Pilot Dredging study Develop open and freshwater SSC BC for Jun 2010 to Oct 2011 run Discuss w HQI remediation in HQI runs w ECOM-SEDZLJS MSC call Develop NB GSD map, develop LPR/NB GSD spatial w in/out navigation channel distinction Recalculate bed elevation changes for Irene w realistic bulk density Report code bugs to HQI, process 2010-2011 SEDZLJS run Review benthic data for locations in inter-tidal zone Review NB wind-wave analysis, Spring PWCM data analysis, review model-data comparisons for bed elevation change in 2010-2011 Attend collaboration meeting Attend MSC meeting Develop ST modeling presentation. for collaboration/MSC meetings Follow-up from collaboration meetings, launch runs w consol core for Irene Code changes for decoupled ST run w bathy feedback via continuity correction, debug and run Develop options for bathy feedback w hydrodynamics, review predictions 2010-2011 bathy changes from run w consol core Review predictions 2010-2011 bathy changes from run w consol core, review bed accumulation from base run for test on bathy feedback, develop coupled run w bathy feedback, develop decoupled run w bathy feedback with continuity correction discuss & send PWCM data and analysis to Pravi Shrestha
Task 7 – LPR/NB Contaminate Fate and Transport Modeling	Call with Integral/AQEA/CH2MH to discuss remediation inputs, codes, etc Develop box model for CFT long-term test runs

	Review core profile plots and incorporation into Google Earth, send to Deltares Develop RI/FS work summary for MSC call Discuss w HQI remediation in HQI runs w ST-SWEM and RCATOX. Review ST-SWEM for HQI particle mixing calculations. Implement HQI particle mixing calculations into CPG OC simplification, launch baseline RCA run for Hg and 2378TCDD MSC call, review ST-SWEM for HQI calculations. of particle mixing Debug projection run, review long-term sediment COPC decline Develop inputs and long-term run for PCB-77, develop scripts for projection runs Follow-up HQI particle mixing question, review runs w HQI bioturbation rate, Review runs w HQI bioturbation rate, review/discuss RCATOX remediation routines w RC Attend collaboration meeting Attend MSC meeting Develop CFT modeling presentation for collaboration/MSC meetings Follow-up from collaboration meetings, launch additional runs with HQI mixing rates Review 1966 bathy errors with Rafael Canizares
Task 10 – Computer Support	Debug hardware issue with 3 new machines, reseed processors Debug OS installation issues with new machines Debug stability issues Install OS on new machines

Dinesh Manian

Task 2 – Data Analysis & Monitoring Design Coordination for Use in Numerical Model	Tracer simulations to predict travel-time from Dundee-Dam by advection/dispersion for release at different times during tide, spring/neap, and different discharges
Task 3 – System Understanding	Aggregating contaminant core profiles from multiple historical datasets in NB and LPR together with overall contaminant data analysis in OpenEarth. Analysis of wind data and wave model predictions in Newark Bay to estimate potential impact on sediment transport Newark Bay system understanding: Creating a wave frequency-distribution for Newark Bay based on 15 year

	wind forcing, from model results of SWAN NB system understanding: 15 year wave statistics at every model grid-cell based on synthetic SWAN model simulations Extracting the spatial movement of ETM along the river from the long term model simulations with and without NB dredge to understand effect of historical bathy changes on salt-water penetration. Newark Bay wave shear stress computation using Swart formulation. Building 16 year shear stress time-series. Understanding flux balance in Newark Bay through analysis of model results Analysis of corrected 1966 bathy - comparison with Cs peak, comparison with other historical bathymetries at contaminant core locations Recompute wave stress statistics in Newark Bay using Soulsby's formulation for smooth flows. Reincorporating the corrected 1966 bathymetry in the contaminant groupings analysis of the lower miles of the river.
Task 5 – LPR/NB Sediment Transport Modeling	Long term morphology run with 1940s post-dredge bathymetry in Newark Bay as well as the LPR; Setting up SedTran boundary conditions for Hurricane Irene (WY2010-2011) simulation Newark Bay understanding: Series of sediment transport runs to understand sediment fluxes in Newark Bay by tracking sediments from different reaches of the Bay. Processing long-term morphology simulations with post-dredge bathymetry in the lower Passaic and NB. Analysis of model results, putting together model results from long term sedTran simulations for MSC presentation MSC meeting Setting up sediment-transport projection run for additional 15 years with recycled hydrodynamics; Processing long term morphology runs for ETM analysis;

Yi Xiong

Task 2 – Data Analysis	Continue with code corrections and additional data analysis Correct the code and regenerate the data files; Interpolate PCB105. Generate the processed data sets for the rest of PCBs. Revisit the data analysis folder for PCB-77; Get the help to fix the MATLAB problem; Do the data analysis for PCB-105. Do the interpolations for the rest 6 PCBs.

	For the 6 PCBs: 1. Clip the interpolated points with the outside of equivalent navigation channel; 2. Spatial Join the clipped interpolated points with grid cells to get the averaged concentration; 3. Put the generated outside channel concentration into PRN files. Run the program to generate PCBs concentration for each cell; Generate the EXCEL files with all the initial condition data; Generate and adjust PCBs PDF distribution figures. Update input files for all 6 PCBs; Look at the PCBs distribution figures. Work on initial conditions for 6 PCBs (PCB-77,81,105,114,118,123): 1. Complete 25' interpolations for left and right sides for each layer and each PCB; 2. Complete the transfer of raster to point; Combine the left and right interpolated points using MERGE